Vegetation Cover Type Mapping and Wetland Survey for the Eckmann–Bischoff Property in Madison County, Illinois

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Introduction and Project Summary

The Eckmann-Bischoff Property was examined on 21-22 August and 13 September to determine what vegetation cover types are present. Three community types were found in the area: marsh, wet shrubland, and forbland. Community boundaries were determined using a Global Positioning System on 4 January 2001. Although no communities of natural area quality exist at the site, one community (marsh type 1) shows evidence of native character and can be considered an environmental asset. Vegetation cover types and wetland delineation sites are mapped on Figure 1.

The project site is located in southwestern Madison County, 2.2 km (1.4 mi) west of Collinsville. It is part of a sediment-filled oxbow of the Mississippi River (Rorick, 1994). The site consists of two adjacent areas that were acquired by the Illinois Department of Transportation at different times. The Eckmann Property was acquired in 1995 and the Bischoff Property in 1997. Prior to acquisition by IDOT, both sites were cropland. Since acquisition, both sites have been allowed to revert to natural vegetation; nothing has been planted at either site.

Bordering the Eckmann-Bischoff Property to the south is Schneider Ditch. A large, wet floodplain forest called Levee Lake is located to the south of Schneider Ditch. Levee Lake was recognized as a natural area by the Illinois Natural Areas Inventory. A grade B shrub swamp/pond occurs within the natural area. The proximity of Levee Lake to the Eckmann-Bischoff Property increases its value as wildlife habitat. To the east of the Eckmann-Bischoff Property are another drainage ditch and an open, wet floodplain forest. The area north of the site is all cropland. West of the site is the Cahokia Canal. A spoil pile with steep embankments separates the Eckmann-Bischoff Property from the canal.

Several reports on this site have been previously submitted. Mitigation site assessments were completed for the Eckmann Property (Plocher, Ketzner and Keene, 1995) and for the Bischoff Property (Keene and Ketzner, 1997). In addition, Rorick (1994) evaluated the potential for wetland hydrology on the Eckmann Property. Monitoring wells have been installed on both the Eckmann and Bischoff Properties, and the Illinois State Geological Survey has been collecting data to assess the hydrology of the site. A report discussing the hydrology was recently submitted (Fucciolo *et al.*, 2000). The wells were installed on the Bischoff Property midway into the growing season of 2000, so data for that site are incomplete and therefore inconclusive. Because only one year (or less) of well data is available, wetland delineations for this project should be considered to be preliminary.

Included with the assessment of a site is its Floristic Quality Index (Taft *et al.* 1997). Although the Index is not a substitute for quantitative vegetation analysis in assessing plant communities, it provides a measure of the floristic integrity or level of disturbance of a site. Each plant species is assigned a rating between 0 and 10 (the Coefficient of Conservatism) that is a subjective indicator of how likely a

plant may be found on an undisturbed site in a natural plant community. A plant species that has a low Coefficient of Conservatism (C) is common and is likely to tolerate disturbed conditions; a species with a high C is relatively rare and is likely to require specific, undisturbed habitats. Species not identified to species level are not rated and are not included in the calculations.

The Florisitic Quality Index (FQI) is calculated as follows: $FQI = R/\sqrt{N}$, where R represents the sum of the numerical ratings (C) for all species recorded for a site, and N represents the number of plants on the site. The C value for each species is shown in the species list for the site. Species not native to Illinois (indicated by ** in the species list for each site) are not included in calculations. An Index score below 10 suggests a site of low natural quality; below five, a highly disturbed site. An FQI value of 20 or more suggests that a site has evidence of native character and may be considered an environmental asset.

The mean C value (also known as mean rated quality) was also calculated for each site. This value is calculated as follows: $mCv = R/N$, where R represents the sum of the numerical ratings (C) for all species recorded for a site, and N represents the number of plants on the site. A mCv of greater than 3.0 probably indicates that a site has good native character.

Description of Project Area

Community Symbol	**Communities Present** Description of Community	**Location in Project Area**

Portions of the project area not described or mapped include drainage ditches and the spoil pile along Cahokia Canal. These areas lack natural quality and do not provide habitat for any species of special concern.

A **Marsh**

1. Covering most of the former Eckmann Property, extending slightly into the former Bischoff Property
2. Southwest corner of site on the former Bischoff Property

1. This site includes the lowest ground in the project area. Its boundary roughly follows the 124.0 m contour line on the ISGS elevation map (Fucciolo *et al.*, 2000). Based on the presence of dominant hydrophytic vegetation, hydric soils, and wetland hydrology, we determined that this site is a wetland. This site is approximately 10.7 ha (26.6 acres) in size. This community, like all those discussed in this report, is former cropland. This marsh is dominated by graminoid wetland species. A few scattered shrubs are also present. The FQI for this community is 22.4 and the mean C value is 2.6. These values are indicative of good natural quality, and this community can be considered an environmental asset. Only 6.2% of the plant species found in this community are not native to the Madison County region. Although only five exotic plants were found, one of them, *Typha angustifolia*, is a dominant in the community. A plant species list for the community can be found in Table 1. This community provides floodwater storage and wildlife habitat of very good quality. Its relatively large size and its ecological structure appear to be

excellent potential foraging and/or breeding habitat for several species of wetland birds. This community is potential breeding habitat for the following bird species of special concern:

Scientific Name	Common Name	Classification
Botaurus lentiginosus	American bittern	Illinois endangered
Gallinula chloropus	common moorhen	Illinois threatened
Ixobrychus exilis	least bittern	Illinois threatened
Rallus elegans	king rail	Illinois endangered

The American bittern is known historically from adjacent St. Clair County (Herkert, 1992). American bitterns nest in marshes, prairie sloughs, and ponds with tall emergent vegetation (Graber, Graber and Kirk, 1978; Gibbs, Melvin and Reid, 1992). This species is apparently more abundant on larger than smaller wetlands (Gibbs, Melvin and Reid, 1992). This community might be suitable for American bittern. The common moorhen inhabits freshwater marshes, canals, quiet rivers, lakes and ponds with emergent aquatic vegetation, especially cattails and bulrushes (Herkert, 1992). Open water habitat is critical for this species. Common moorhen is still present in the nearby marshes of the East St. Louis area (Bohlen, 1989). Although little open water is available, this community might provide marginal habitat for this species. The least bittern is a species of freshwater and brackish marshes with dense, tall growths of aquatic or semiaquatic vegetation, particularly *Typha*, *Carex*, *Scirpus*, *Sagittaria* or *Myriscus*, interspersed with clumps of woody vegetation and open water (Gibbs, Reid and Melvin, 1992). Again, because of the small amount of open water, this community may only provide marginal habitat for this species. The king rail is an inhabitant of tidal freshwater and brackish marshes, nontidal freshwater marshes, successional stages of marsh-shrub swamp, and domestic ricefields (Meanley, 1992). Grasses, sedges, rushes and cattail are important cover types. Nests are usually placed in grass or rush clumps or sedge tussocks. Nesting usually occurs in fairly uniform stands of vegetation (Meanley, 1992). Recent nesting of this species has been documented from Madison County (Herkert, 1994). This community might be suitable nesting habitat for king rail. While conducting the field survey, several other bird species, including little blue heron, great blue heron, green heron and great egret were observed foraging in this community. Little blue heron is listed as endangered in Illinois (Illinois Endangered Species Protection Board, 1999). Although breeding habitat is not present for herons and egrets, this community provides excellent foraging habitat. In addition, several white-tailed deer were observed at the site. A wetland determination form for this community can be found in Appendix 1 (site 1).

Dominant Plant Species

Herbs - *Leersia oryzoides*, *Scirpus fluviatilis* & *Typha angustifolia*

Table 1. Plant species list for marsh type 1.

Scientific name	Common name	Stratum	Wetland indicator status	C*
Acer negundo	box elder	herb	FACW-	1
Acer saccharinum	silver maple	herb	FACW	1
Agalinis tenuifolia	slender false foxglove	herb	FACW	5
Alisma plantago-aquatica	broad-leaf water-plantain	herb	OBL	2
Amaranthus tuberculatus	tall waterhemp	herb	OBL	1
Ambrosia trifida	giant ragweed	herb	FAC+	0
Ammannia coccinea	long-leaved ammannia	herb	OBL	5
Apocynum cannabinum	dogbane	herb	FAC	2
Asclepias incarnata	swamp milkweed	herb	OBL	4
Aster praealtus	willow-leaved aster	herb	OBL	4
Aster simplex	panicled aster	herb	FACW	3
Azolla mexicana	water fern	herb	OBL	8
Bacopa rotundifolia	water hyssop	herb	OBL	5
Bidens frondosa	common beggar-ticks	herb	FACW	1
Bidens tripartita	beggartick	herb	OBL	2
Boehmeria cylindrica	false nettle	herb	OBL	3
Boltonia asteroides	false aster	herb	FACW	5
Calystegia sepium	bindweed	herb	FAC	1
Carex hyalinolepis	sedge	herb	OBL	4
Cassia fasciculata	partridge pea	herb	FACU-	1
Chamaesyce maculata	nodding spurge	herb	FACU-	0
Conyza canadensis	horseweed	herb	FAC-	0
Cynanchum laeve	blue vine	herb	FAC	1
Cyperus acuminatus	taperleaf flat sedge	herb	OBL	2
Cyperus esculentus	yellow nut-sedge	herb	FACW	0
Cyperus ferruginescens	rusty nut-sedge	herb	OBL	1
Cyperus strigosus	straw colored flatsedge	herb	FACW	0
Desmodium paniculatum	panicled tick trefoil	herb	FACU	2
Echinochloa muricata	barnyard grass	herb	OBL	0
Eclipta prostrata	yerba de tajo	herb	FACW	2
Eleocharis obtusa	spike rush	herb	OBL	2
Eleocharis smallii	spike rush	herb	OBL	5
Elymus virginicus	Virginia wild rye	herb	FACW-	4
Eupatorium serotinum	late boneset	herb	FAC+	1
Fraxinus pennsylvanica	green ash	sapling, shrub	FACW	2
Hibiscus laevis	rose mallow	herb	OBL	4
Ipomoea lacunosa	white morning-glory	herb	FACW	1
Iva annua	marsh elder	herb	FAC	0
Juncus torreyi	Torrey's rush	herb	FACW	3
Leersia oryzoides	rice cutgrass	herb	OBL	3
Lemna minor	common duckweed	herb	OBL	3
Leptochloa fascicularis	bearded sprangle top	herb	OBL	0
Lindernia dubia	false pimpernel	herb	OBL	5
Ludwigia peploides	creeping primrose willow	herb	OBL	5
Ludwigia polycarpa	false loosestrife	herb	OBL	5
Lycopus americanus	common water horehound	herb	OBL	3
Mentha arvensis	field mint	herb	FACW	4
Mimulus alatus	winged monkey flower	herb	OBL	6

Table 1 continued on following page.

Table 1. Plant species list for marsh type 1 (continued).

Scientific name	Common name	Stratum	Wetland indicator status	C*
Panicum dichotomiflorum	fall panicum	herb	FACW-	0
Peltandra virginica	arrow arum	herb	OBL	8
Penthorum sedoides	ditch stonecrop	herb	OBL	2
Phragmites australis	common red reed	herb	FACW+	1
Phyla lanceolata	fog-fruit	herb	OBL	1
Platanus occidentalis	sycamore	shrub	FACW	3
Polygonum amphibium	water smartweed	herb	OBL	3
Polygonum bicorne	smartweed	herb	FAC	2
Polygonum hydropiperoides	mild water pepper	herb	OBL	4
Polygonum lapathifolium	pale smartweed	herb	FACW+	0
Polygonum pensylvanicum	common smartweed	herb	FACW+	1
Polygonum persicaria	spotted lady's thumb	herb	FACW	**
Polygonum punctatum	dotted smartweed	herb	OBL	3
Populus deltoides	eastern cottonwood	shrub, herb	FAC+	2
Potamogeton nodosus	pondweed	herb	OBL	7
Pyrrhopappus carolinianus	false dandelion	herb	UPL	1
Rumex altissimus	pale dock	herb	FACW-	2
Rumex crispus	curly dock	herb	FAC+	**
Sagittaria latifolia	arrowhead	herb	OBL	4
Salix amygdaloides	peach-leaved willow	sapling, shrub	FACW	4
Salix exigua	sandbar willow	shrub	OBL	1
Salix nigra	black willow	sapling, herb	OBL	3
Scirpus fluviatilis	river bulrush	herb	OBL	3
Scirpus tabernaemontanii	great bulrush	herb	OBL	4
Setaria faberi	giant foxtail	herb	FACU+	**
Setaria glauca	yellow foxtail	herb	FAC	**
Sium suave	water parsnip	herb	OBL	5
Solidago canadensis	Canada goldenrod	herb	FACU	1
Typha angustifolia	narrow-leaved cattail	herb	OBL	**
Typha latifolia	cattail	herb	OBL	1
Ulmus americana	American elm	herb	FACW-	5
Urtica dioica	stinging nettle	herb	FAC+	2
Xanthium strumarium	cockle bur	herb	FAC	0

*Coefficient of Conservatism (Taft *et al.* 1997)
**Non-native species

FQI = $R/\sqrt{N} = 195/\sqrt{76} = 22.4$
mCv = $R/N = 195/76 = 2.6$

2. This marsh community is located on the lowest ground of the former Bischoff Property. It is smaller and of a lower natural quality than marsh type 1. Vegetation at this marsh has had less time to develop than the vegetation of marsh type 1. The boundary of this marsh roughly follows the 124.25 m contour line on the ISGS elevation map (Fucciolo *et al.*, 2000). Based on the presence of dominant hydrophytic vegetation, hydric soils, and wetland hydrology, we determined that this site is a wetland. This marsh is approximately 0.9 ha (2.3 acres) in size and is dominated by hydrophytic grasses and forbs. A few scattered shrubs are also present. The FQI for this community is 13.6 and the mean C value is 2.2. These values are indicative of fair natural quality. 14.9% of the plant species found in this community are not native to the Madison County region. A plant species list for the community can be found in Table 2. This community provides floodwater storage and wildlife habitat of fairly good quality. Because of its smaller size, it is probably not as valuable wildlife habitat as marsh type 1. However, it might provide marginal breeding and/or foraging habitat for all of the bird species discussed under marsh type 1. A wetland determination form for this community can be found in Appendix 1 (site 2).

Dominant Plant Species

Herbs - *Aster simplex, Leersia oryzoides & Phragmites australis*

Table 2. Plant species list for marsh type 2.

Scientific name	Common name	Stratum	Wetland indicator status	C*
Acer negundo	box elder	herb	FACW-	1
Acer saccharinum	silver maple	herb	FACW	1
Amaranthus tuberculatus	tall waterhemp	herb	OBL	1
Andropogon virginicus	broom sedge	herb	FAC-	1
Apios americana	groundnut	herb	FACW	3
Apocynum cannabinum	dogbane	herb	FAC	2
Asclepias incarnata	swamp milkweed	herb	OBL	4
Aster simplex	panicled aster	herb	FACW	3
Bidens cernua	nodding beggar-ticks	herb	OBL	2
Boltonia asteroides	false aster	herb	FACW	5
Chamaesyce humistrata	milk spurge	herb	FACW	1
Cyperus acuminatus	taperleaf flat sedge	herb	OBL	2
Cyperus ferruginescens	rusty nutsedge	herb	OBL	1
Cyperus strigosus	straw colored flatsedge	herb	FACW	0
Echinochloa muricata	barnyard grass	herb	OBL	0
Eleocharis smallii	spike rush	herb	OBL	5
Eupatorium serotinum	late boneset	herb	FAC+	1
Fraxinus pennsylvanica	green ash	shrub, herb	FACW	2
Hibiscus lasiocarpus	hairy rose mallow	herb	FACW+	5
Humulus japonicus	Japanese hops	herb	FACU	**
Ipomoea lacunosa	white morning-glory	herb	FACW	1
Leersia oryzoides	rice cutgrass	herb	OBL	3
Leptochloa fascicularis	bearded sprangle top	herb	OBL	0
Lycopus americanus	common water horehound	herb	OBL	3
Morus alba	white mulberry	herb	FAC	**
Penthorum sedoides	ditch stonecrop	herb	OBL	2
Phalaris arundinacea	reed canary grass	herb	FACW+	**
Phragmites australis	common red reed	herb	FACW+	1
Phyla lanceolata	fog-fruit	herb	OBL	1
Platanus occidentalis	sycamore	herb	FACW	3
Polygonum lapathifolium	curttop lady's thumb	herb	FACW+	0
Polygonum pensylvanicum	common smartweed	herb	FACW+	1
Polygonum persicaria	spotted lady's thumb	herb	FACW	**
Populus deltoides	eastern cottonwood	shrub, herb	FAC+	2
Rumex altissimus	pale dock	herb	FACW-	2
Rumex crispus	curly dock	herb	FAC+	**
Salix amygdaloides	peach-leaved willow	shrub	FACW	4
Salix exigua	sandbar willow	shrub	OBL	1
Salix nigra	black willow	herb	OBL	3
Scirpus tabernaemontanii	great bulrush	herb	OBL	4
Setaria faberi	giant foxtail	herb	FACU+	**
Sium suave	water parsnip	herb	OBL	5
Solidago canadensis	Canada goldenrod	herb	FACU	1
Solidago gigantea	late goldenrod	herb	FACW	3
Typha angustifolia	narrow-leaved cattail	herb	OBL	**
Typha latifolia	cattail	herb	OBL	1
Ulmus americana	American elm	herb	FACW-	5

*Coefficient of Conservatism (Taft *et al.* 1997)
**Non-native species

$FQI = R/\sqrt{N} = 86/\sqrt{40} = 13.6$
$mCv = R/N = 86/40 = 2.2$

Community Symbol	**Communities Present** Description of Community	**Location in Project Area**
B	**Wet Shrubland**	**Covering most of the north quarter and part of the southwest quarter of the former Eckmann Property**

This wet shrubland consists of two separate areas located on the former Eckmann Property, both adjacent to marsh type 1. The boundary of this community occurs just above the 124.0 m contour line on the ISGS elevation map (Fucciolo *et al.*, 2000). Based on the presence of dominant hydrophytic vegetation, hydric soils, and wetland hydrology, we determined that this site is a wetland. However, the well data collected by the ISGS at the southern section of this community indicates that the length of time this site is saturated may meet, but does not conclusively meet, the criteria for wetland hydrology. Additional well data collected over a longer period is needed to determine if wetland hydrology is present at this part of the site. Regardless of the possible difference in hydrology, all parts of this community have a very similar vegetation cover. This wet shrubland is approximately 5.5 ha (13.6 acres) in total size. The northern section is approximately 3.1 ha (7.7 acres) and the southern section is approximately 2.4 ha (5.9 acres) in size. It is dominated by shrub-sized individuals of hydrophytic trees and wetland forbs. This community will eventually develop into floodplain forest. The FQI for this community is 15.5 and the mean C value is 1.9. These values are indicative of fair natural quality. 12.3% of the plant species found in this community are not native to the Madison County region. A plant species list for the community can be found in Table 3. This community provides floodwater storage and wildlife habitat of fair quality. A wetland determination form for this community can be found in Appendix 1 (site 3).

Dominant Plant Species

Shrubs - *Populus deltoides*, *Salix amygdaloides* and *Salix exigua*
Herbs - *Apocynum cannabinum*, *Asclepias incarnata* and *Leersia oryzoides*

Table 3. Plant species list for wet shrubland.

Scientific name	Common name	Stratum	Wetland indicator status	C*
Abutilon theophrasti	velvet-leaf	herb	FACU-	**
Acalypha rhomboidea	three-seeded mercury	herb	FACU	0
Acer negundo	box elder	herb	FACW-	1
Acer saccharinum	silver maple	herb	FACW	1
Agalinis tenuifolia	slender false foxglove	herb	FACW	5
Amaranthus tuberculatus	tall waterhemp	herb	OBL	1
Ambrosia artemisiifolia	common ragweed	herb	FACU	0
Ambrosia trifida	giant ragweed	herb	FAC+	0
Apocynum cannabinum	dogbane	herb	FAC	2
Asclepias incarnata	swamp milkweed	herb	OBL	4
Aster pilosus	hairy aster	herb	FACU-	0
Aster simplex	panicled aster	herb	FACW	3
Bidens aristosa	swamp marigold	herb	FACW	1
Bidens frondosa	common beggar-ticks	herb	FACW	1
Campsis radicans	trumpet creeper	herb	FAC	2
Carex frankii	sedge	herb	OBL	4
Carex hyalinolepis	sedge	herb	OBL	4
Cassia fasciculata	partridge pea	herb	FACU-	1
Chamaesyce humistrata	milk spurge	herb	FACW	1
Chamaesyce maculata	nodding spurge	herb	FACU-	0
Conyza canadensis	horseweed	herb	FAC-	0
Cuscuta cuspidata	dodder	herb	FACW+	5
Cynanchum laeve	blue vine	herb	FAC	1
Cyperus esculentus	yellow nutsedge	herb	FACW	0
Cyperus ferruginescens	rusty nutsedge	herb	OBL	1
Desmodium paniculatum	panicled tick trefoil	herb	FACU	2
Desmodium sp.	tick trefoil	herb	——	–
Digitaria ischaemum	smooth crab grass	herb	FACU	**
Echinochloa muricata	barnyard grass	herb	OBL	0
Eclipta prostrata	yerba de tajo	herb	FACW	2
Eleocharis smallii	spike rush	herb	OBL	5
Erigeron annuus	annual fleabane	herb	FAC-	1
Eupatorium serotinum	late boneset	herb	FAC+	1
Fraxinus pennsylvanica	green ash	shrub	FACW	2
Ipomoea lacunosa	white morning-glory	herb	FACW	1
Iva annua	marsh elder	herb	FAC	0
Juncus interior	inland rush	herb	FAC+	3
Juncus torreyi	Torrey's rush	herb	FACW	3
Leersia oryzoides	rice cutgrass	herb	OBL	3
Leucospora multifida	leucospora	herb	FACW+	3
Lycopus americanus	common water horehound	herb	OBL	3
Lythrum alatum	winged loosestrife	herb	OBL	5
Mentha arvensis	field mint	herb	FACW	4
Morus alba	white mulberry	herb	FAC	**
Panicum capillare	witch grass	herb	FAC	0
Parthenocissus quinquefolia	Virginia creeper	herb	FAC-	2
Penthorum sedoides	ditch stonecrop	herb	OBL	2
Phragmites australis	common reed	herb	FACW+	1

Table 3 continued on following page.

Table 3. Plant species list for wet shrubland (continued).

Scientific name	Common name	Stratum	Wetland indicator status	C*
Phyla lanceolata	fog-fruit	herb	OBL	1
Physalis subglabrata	smooth ground cherry	herb	UPL	0
Platanus occidentalis	sycamore	herb	FACW	3
Polygonum lapathifolium	nodding smartweed	herb	FACW+	0
Polygonum pensylvanicum	common smartweed	herb	FACW+	1
Polygonum persicaria	spotted lady's thumb	herb	FACW	**
Populus deltoides	eastern cottonwood	shrub	FAC+	2
Potentilla norvegica	rough cinquefoil	herb	FAC	0
Rumex crispus	curly dock	herb	FAC+	**
Salix amygdaloides	peach-leaved willow	shrub	FACW	4
Salix exigua	sandbar willow	shrub	OBL	1
Samolus valerandii	brookweed	herb	OBL	5
Scirpus fluviatilis	river bulrush	herb	OBL	3
Setaria faberi	giant foxtail	herb	FACU+	**
Setaria glauca	yellow foxtail	herb	FAC	**
Sida spinosa	prickly sida	herb	FACU	**
Solanum ptycanthum	black nightshade	herb	FACU-	0
Solidago canadensis	Canada goldenrod	herb	FACU	1
Stachys sp.	hedge nettle	herb	----	–
Strophostyles helvola	wild bean	herb	FAC+	3
Toxicodendron radicans	poison ivy	herb	FAC+	1
Typha angustifolia	narrow-leaved cattail	herb	OBL	**
Ulmus americana	American elm	herb	FACW-	5
Verbena urticifolia	white vervian	herb	FAC+	3
Vitis aestivalis	summer grape	herb	FACU	4
Vitis cinerea	winter grape	woody vine	FACW-	4
Vitis riparia	riverbank grape	herb	FACW-	2

*Coefficient of Conservatism (Taft *et al.* 1997)
**Non-native species

$FQI = R/\sqrt{N} = 124/\sqrt{64} = 15.5$
$mCv = R/N = 124/64 = 1.9$

Community Symbol	**Communities Present** Description of Community	**Location in Project Area**
C	**Forbland**	**1. Northwest corner of the former Eckmann Property** **2. Covering most of the former Bischoff Property**

1. This forbland is located near the northwest corner of the former Eckmann Property. The boundary of this community occurs just above the 124.25 m contour line on the ISGS elevation map (Fucciolo *et al.*, 2000). Although dominant hydrophytic vegetation and hydric soils are present, no conclusive evidence of wetland hydrology could be found at this site. However, well data collected by the ISGS indicates that the length of time this site is saturated may meet, but does not conclusively meet, the criterion for wetland hydrology. Additional well data collected over a longer period is needed to determine if wetland hydrology is present at this site. Because of the inconclusive results of the well data, this site is tentatively classified as forbland. If wetland hydrology does indeed exist, then this community would be better classified as wet meadow. This community is approximately 0.3 ha (0.8 acre) in size and is dominated by hydrophytic forbs and giant foxtail, *Setaria faberi.* The dominance of giant foxtail is probably due to recent disturbance, and this exotic weed will probably not persist as a dominant for long. This community shows signs of recent disturbance, including tire ruts and flattened vegetation. It appears that heavy machinery was recently parked at this site, possibly during harvest of the adjacent cultivated field. The FQI for this community is 11.9 and the mean C value is 1.7. These values are indicative of fair natural quality. 13.6% of the plant species found in this community are not native to the Madison County region. A plant species list for the community can be found in Table 4. This community provides wildlife habitat of fair quality. This forbland is notable for the presence of *Boltonia decurrens*, the decurrent false aster. Two individuals of this wetland plant species were found in this community. The decurrent false aster is listed as threatened in both the State of Illinois and on the national level. A wetland determination form for this community can be found in Appendix 1 (site 4).

Dominant Plant Species

Herbs - *Asclepias incarnata, Lycopus americanus* and *Setaria faberi*

Table 4. Plant species list for forbland type 1.

Scientific name	Common name	Stratum	Wetland indicator status	C*
Acalypha rhomboidea	three-seeded mercury	herb	FACU	0
Acer saccharinum	silver maple	herb	FACW	1
Agalinis tenuifolia	slender false foxglove	herb	FACW	5
Amaranthus tuberculatus	tall waterhemp	herb	OBL	1
Ambrosia trifida	giant ragweed	herb	FAC+	0
Ampelopsis cordata	raccoon grape	herb	FAC+	2
Apocynum cannabinum	dogbane	herb	FAC	2
Asclepias incarnata	swamp milkweed	herb	OBL	4
Asclepias syriaca	common milkweed	herb	UPL	0
Aster pilosus	hairy aster	herb	FACU-	0
Aster simplex	panicled aster	herb	FACW	3
Bidens frondosa	common beggar-ticks	herb	FACW	1
Boltonia asteroides	false aster	herb	FACW	5
Boltonia decurrens	decurrent false aster	herb	OBL	4
Calystegia sepium	bindweed	herb	FAC	1
Carex hyalinolepis	sedge	herb	OBL	4
Carex sp.	sedge	herb	-----	–
Chamaesyce humistrata	milk spurge	herb	FACW	1
Chamaesyce maculata	nodding spurge	herb	FACU-	0
Conyza canadensis	horseweed	herb	FAC-	0
Cornus drummondii	rough-leaved dogwood	herb	FAC	2
Cynanchum laeve	blue vine	herb	FAC	1
Cyperus esculentus	yellow nutsedge	herb	FACW	0
Desmodium paniculatum	panicled tick trefoil	herb	FACU	2
Desmodium sp.	tick trefoil	herb	-----	–
Digitaria ischaemum	smooth crab grass	herb	FACU	**
Digitaria sanguinalis	hairy crab grass	herb	FACU	**
Echinochloa muricata	barnyard grass	herb	OBL	0
Eclipta prostrata	yerba de tajo	herb	FACW	2
Erigeron annuus	annual fleabane	herb	FAC-	1
Eupatorium serotinum	late boneset	herb	FAC+	1
Fraxinus pennsylvanica	green ash	shrub	FACW	2
Ipomoea lacunosa	white morning-glory	herb	FACW	1
Iva annua	marsh elder	herb	FAC	0
Leersia oryzoides	rice cutgrass	herb	OBL	3
Lespedeza cuneata	sericea lespedeza	herb	NI	**
Leucospora multifida	leucospora	herb	FACW+	3
Lycopus americanus	common water horehound	herb	OBL	3
Oenothera biennis	evening primrose	herb	FACU	1
Panicum capillare	witch grass	herb	FAC	0
Panicum dichotomiflorum	fall panicum	herb	FACW-	0
Paspalum pubiflorum glabrum	beadgrass	herb	FACW	3
Penthorum sedoides	ditch stonecrop	herb	OBL	2
Phragmites australis	common reed	herb	FACW+	1
Plantago rugelii	Rugel's plantain	herb	FAC	0
Platanus occidentalis	sycamore	shrub	FACW	3
Polygonum punctatum	dotted smartweed	herb	OBL	3
Populus deltoides	eastern cottonwood	shrub	FAC+	2

Table 4 continued on following page.

Table 4. Plant species list for forbland type 1 (continued).

Scientific name	Common name	Stratum	Wetland indicator status	C*
Potentilla norvegica	rough cinquefoil	herb	FAC	0
Rumex crispus	curly dock	herb	FAC+	**
Setaria faberi	giant foxtail	herb	FACU+	**
Setaria glauca	yellow foxtail	herb	FAC	**
Sida spinosa	prickly sida	herb	FACU	**
Solidago canadensis	Canada goldenrod	herb	FACU	1
Sorghum halepense	Johnson grass	herb	FACU	**
Strophostyles helvola	wild bean	herb	FAC+	3
Teucrium canadense	American germander	herb	FACW-	3
Toxicodendron radicans	poison ivy	herb	FAC+	1
Verbena urticifolia	white vervian	herb	FAC+	3
Vitis cinerea	winter grape	herb	FACW-	4
Xanthium strumarium	cockle bur	herb	FAC	0

*Coefficient of Conservatism (Taft *et al.* 1997)
**Non-native species

$FQI = R/\sqrt{N} = 85/\sqrt{51} = 11.9$
$mCv = R/N = 85/51 = 1.7$

2. This forbland covers most of the former Bischoff Property and includes the highest ground in the project area. Generally, the boundary of this community occurs just above the 124.25 m contour line on the ISGS elevation map (Fucciolo *et al.*, 2000). Although hydric soils are present, no evidence of dominant hydrophytic vegetation or wetland hydrology could be found. None of the dominant plant species are considered hydrophytic, and this site appears to be relatively high ground. Although well data is needed to conclusively assess the hydrology, we believe that this site is probably not flooded or saturated long enough to meet the wetland hydrology criterion. Collection of well data for this area is planned by the ISGS. Because of the lack of well data, this site is tentatively classified as forbland. However, even if well data indicates that wetland hydrology is present, this site still lacks dominant hydrophytic vegetation and cannot be classified as a wetland community. This forbland is approximately 7.8 ha (19.2 acres) in size and is dominated by giant foxtail and Canada goldenrod. These plants are typical of open, early successional habitats such as recently abandoned cropland. Although giant foxtail is prevalent enough to be considered a dominant, Canada goldenrod is much more important in the community. The FQI for this community is 15.0 and the mean C value is 2.0. These values are indicative of fair natural quality. 15.4% of the plant species found in this community are not native to the Madison County region. A plant species list for the community can be found in Table 5. This community provides wildlife habitat of fair quality. A wetland determination form for this community can be found in Appendix 1 (site 5).

Dominant Plant Species

Herbs - *Setaria faberi* and *Solidago canadensis*

Table 5. Plant species list for forbland type 2.

Scientific name	Common name	Stratum	Wetland indicator status	C*
Acalypha rhomboidea	three-seeded mercury	herb	FACU	0
Acer negundo	box elder	herb	FACW-	1
Acer saccharinum	silver maple	herb	FACW	1
Agalinis tenuifolia	slender false foxglove	herb	FACW	5
Ambrosia trifida	giant ragweed	herb	FAC+	0
Ampelopsis cordata	raccoon grape	herb	FAC+	2
Anagallis arvensis	scarlet pimpernel	herb	UPL	**
Andropogon virginicus	broom sedge	herb	FAC-	1
Apios americana	groundnut	herb	FACW	3
Asclepias incarnata	swamp milkweed	herb	OBL	4
Aster pilosus	hairy aster	herb	FACU-	0
Boehmeria cylindrica	false nettle	herb	OBL	3
Boltonia asteroides	false aster	herb	FACW	5
Calystegia sepium	bindweed	herb	FAC	1
Carex crus-corvi	sedge	herb	OBL	6
Chamaesyce humistrata	milk spurge	herb	FACW	1
Chamaesyce maculata	nodding spurge	herb	FACU-	0
Cirsium discolor	field thistle	herb	UPL	3
Conyza canadensis	horseweed	herb	FAC-	0
Cyperus esculentus	yellow nutsedge	herb	FACW	0
Cyperus strigosus	straw colored flatsedge	herb	FACW	0
Desmodium paniculatum	panicled tick trefoil	herb	FACU	2
Desmodium sp.	tick trefoil	herb	-----	–
Digitaria sanguinalis	hairy crab grass	herb	FACU	**
Echinochloa muricata	barnyard grass	herb	OBL	0
Eclipta prostrata	yerba de tajo	herb	FACW	2
Elaeagnus umbellata	autumn olive	shrub	UPL	**
Eupatorium altissimum	tall boneset	herb	FACU	2
Eupatorium serotinum	late boneset	herb	FAC+	1
Fraxinus pennsylvanica	green ash	herb	FACW	2
Geum canadense	white avens	herb	FAC	2
Gnaphalium obtusifolium	cudweed	herb	UPL	2
Helianthus tuberosus	Jerusalem artichoke	herb	FAC	3
Humulus japonicus	Japanese hops	herb	FACU	**
Hypericum punctatum	spotted St. John's-wort	herb	FAC+	3
Ipomoea lacunosa	white morning-glory	herb	FACW	1
Lactuca canadensis	Canada lettuce	herb	FACU+	1
Leersia oryzoides	rice cutgrass	herb	OBL	3
Lespedeza cuneata	sericea lespedeza	herb	NI	**
Leucospora multifida	leucospora	herb	FACW+	3
Lycopus americanus	common water horehound	herb	OBL	3
Melilotus alba	white sweet clover	herb	FACU	**
Morus alba	white mulberry	shrub	FAC	**
Muhlenbergia schreberi	nimble will	herb	FAC	0
Oenothera biennis	evening primrose	herb	FACU	1
Panicum dichotomiflorum	fall panicum	herb	FACW-	0
Phragmites australis	common reed	herb	FACW+	1
Phyla lanceolata	fog-fruit	herb	OBL	1

Table 5 continued on following page.

Table 5. Plant species list for forbland type 2 (continued).

Scientific name	Common name	Stratum	Wetland indicator status	C*
Platanus occidentalis	sycamore	herb	FACW	3
Populus deltoides	eastern cottonwood	shrub, herb	FAC+	2
Potentilla norvegica	rough cinquefoil	herb	FAC	0
Rhus glabra	smooth sumac	herb	UPL	1
Rudbeckia triloba	brown-eyed Susan	herb	FAC-	3
Samolus valerandii	brookweed	herb	OBL	5
Setaria faberi	giant foxtail	herb	FACU+	**
Setaria glauca	yellow foxtail	herb	FAC	**
Silphium perfoliatum	cup plant	herb	FACW-	4
Solidago canadensis	Canada goldenrod	herb	FACU	1
Solidago gigantea	giant goldenrod	herb	FACW	3
Solidago juncea	early goldenrod	herb	UPL	4
Sorghum halepense	Johnson grass	herb	FACU	**
Strophostyles helvola	wild bean	herb	FAC+	3
Toxicodendron radicans	poison ivy	herb	FAC+	1
Ulmus americana	American elm	herb	FACW-	5
Verbena urticifolia	white vervian	herb	FAC+	3
Vitis cinerea	winter grape	herb	FACW-	4

*Coefficient of Conservatism (Taft *et al.* 1997)
**Non-native species

$FQI = R/\sqrt{N} = 111/\sqrt{55} = 15.0$
$mCv = R/N = 111/55 = 2.0$

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Vegetation Cover Type Mapping & Wetland Survey

Eckmann-Bischoff Property
FAP 14 (IL 3)
Section (64, 510)-1
P-98-082-90
Madison County, Illinois

Cover Types A-C

- Marsh (Types 1 & 2)
- Wet shrubland
- Forbland (Types 1 & 2)

Wetland Delineation Sites 1-5

Base photo is the Digital Orthophoto Quadrangle (DOQ) from NAPP 1998-1999 aerial photography.

N

0 100 200 Meters

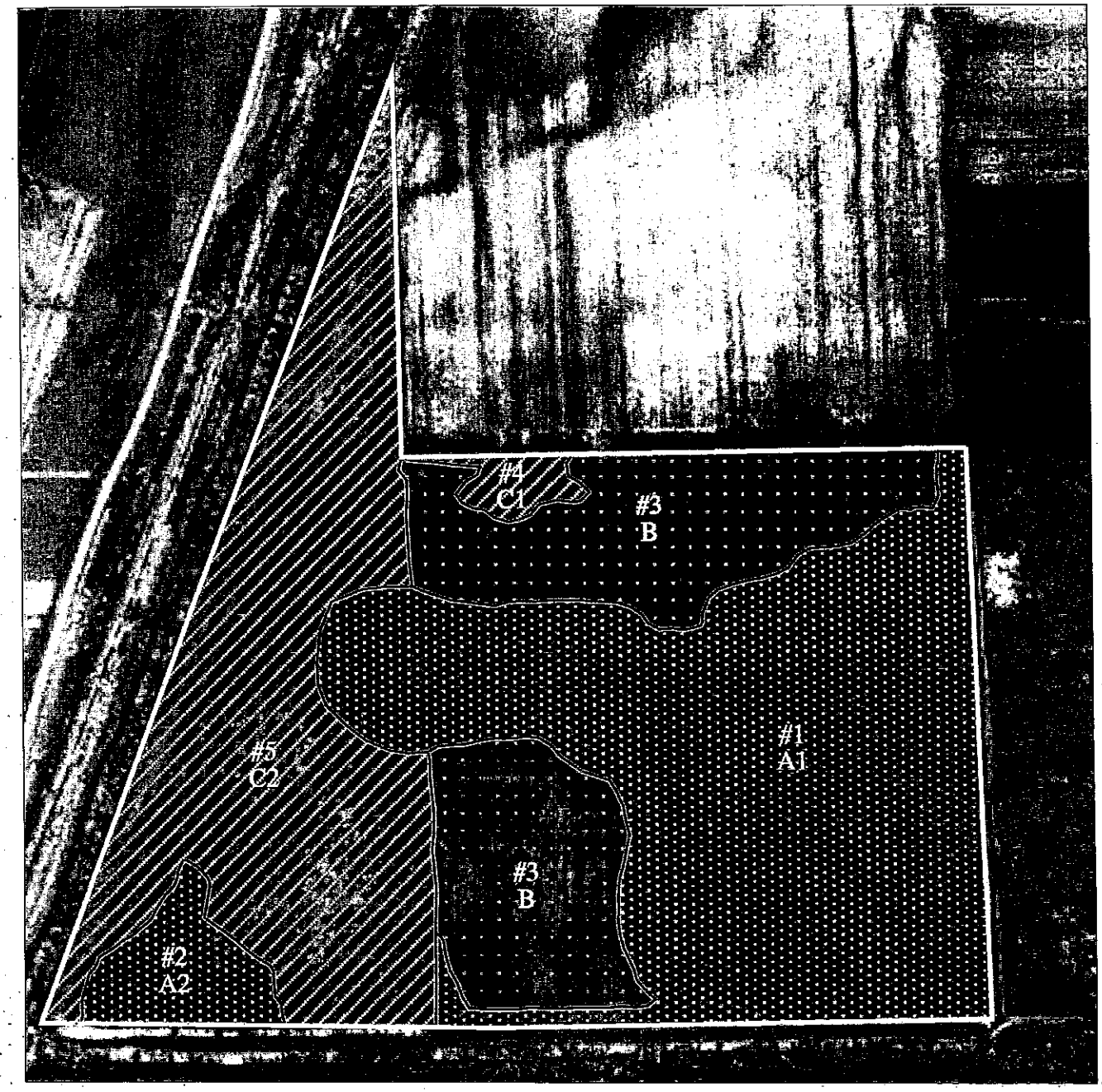

Figure 1. Vegetation cover types at the Eckmann-Bischoff Property.

Appendix 1

ROUTINE ON-SITE WETLAND DETERMINATION
Site 1 (page 1 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Marsh Type 1
Legal Description: S 1/2, NE 1/4, Sec. 25, T3N, R9W
Location: Covering most of the former Eckmann Property, extending slightly into the former Bischoff Property

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Indicator Status	Stratum
1. *Leersia oryzoides*	OBL	herb
2. *Scirpus fluviatilis*	OBL	herb
3. *Typha angustifolia*	OBL	herb

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 100%

Hydrophytic vegetation: Yes: X No:
Rationale: Over 50% of the dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Beaucoup silty clay loam; revised to Birds silt loam (Typic Fluvaquent)

On county hydric soils list?	Yes: X	No:	Undetermined:
Is the soil a histosol?	Yes:	No: X	Undetermined:
Histic epipedon present?	Yes:	No: X	Undetermined:
Redox concentrations:	Yes: X	No:	Color: 10YR 3/4
Redox depletions:	Yes:	No: X	Color: NA

Matrix color: N 4/
Other indicators: none

Hydric soils: Yes: X No:
Rationale: The Natural Resources Conservation Service identifies Birds as a Typic Fluvaquent which is poorly drained. This soil posesses redox concentrations within a gleyed matrix, which indicates saturated or reduced conditions for long duration during the growing season. Therefore, the soil at this site meets the hydric soil criterion.

ROUTINE ON-SITE WETLAND DETERMINATION
Site 1 (page 2 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Marsh Type 1
Legal Description: S 1/2, NE 1/4, Sec. 25, T3N, R9W
Location: Covering most of the former Eckmann Property, extending slightly into the former Bischoff Property

HYDROLOGY

Inundated: Yes: X No: Depth of standing water: 0 – 0.3 m (0 – 1 ft)
Depth to saturated soil: at surface
Overview of hydrological flow through the system: This site receives water through precipitation, sheet flow from higher ground, and possibly from backflow via Schneider Ditch (Rorick, 1994). Water leaves the site via evapotranspiration and possibly by sheet flow into Schneider Ditch on occasions.
Size of watershed: < 13 km^2 (5 mi^2)
Other field evidence observed: This site is bordered to the east and south by drainage ditches. In addition, two shallow ditches run through the site and empty into these bordering ditches. This site is lower than ground to the north and the west. Inundation was also observed at this site during a visit on 21 August 2000. Well data collected by the Illinois State Geological Survey indicates that all of this site conclusively met the criterion for wetland hydrology this year (Fucciolo *et al.*, 2000).

Wetland hydrology: Yes: X No:
Rationale: The relatively low landscape position, the visual observation of inundation and saturation at the surface, and well data indicate that wetland hydrology is present. The ditch system in and around this site does not appear to effectively drain it. In our opinion, this site is flooded or saturated long enough to meet the wetland hydrology criterion.

DETERMINATION AND RATIONALE:

Is the site a wetland? Yes: X No:
Rationale for decision: Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are all present. This site meets all of the wetland criteria. The NWI does not code this site as a wetland

Determined by: David Ketzner & Dan Busemeyer
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ROUTINE ON-SITE WETLAND DETERMINATION
Site 2 (page 1 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Marsh Type 2
Legal Description: S 1/2, SW 1/4, NE 1/4, Sec. 25, T3N, R9W
Location: Southwest corner of site on the former Bischoff Property

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Indicator Status	Stratum
1. *Aster simplex*	FACW	herb
2. *Leersia oryzoides*	OBL	herb
3. *Phragmites australis*	FACW+	herb

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 100%

Hydrophytic vegetation: Yes: X No:
Rationale: Over 50% of the dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Beaucoup silty clay loam, wet; revised to Birds silt loam (Typic Fluvaquent)

On county hydric soils list?	Yes: X	No:	Undetermined:
Is the soil a histosol?	Yes:	No: X	Undetermined:
Histic epipedon present?	Yes:	No: X	Undetermined:
Redox concentrations:	Yes: X	No:	Color: 7.5YR 4/6
Redox depletions:	Yes:	No: X	Color: NA

Matrix color: 2.5Y 3/1 over N 4/
Other indicators: none

Hydric soils: Yes: X No:
Rationale: The Natural Resources Conservation Service identifies Birds as a Typic Fluvaquent which is poorly drained. This soil posesses redox concentrations within a gleyed matrix, which indicates saturated or reduced conditions for long duration during the growing season. Therefore, the soil at this site meets the hydric soil criterion.

ROUTINE ON-SITE WETLAND DETERMINATION
Site 2 (page 2 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Marsh Type 2
Legal Description: S 1/2, SW 1/4, NE 1/4, Sec. 25, T3N, R9W
Location: Southwest corner of site on the former Bischoff Property

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: NA
Depth to saturated soil: at surface
Overview of hydrological flow through the system: This site receives water through precipitation and sheet flow from higher ground. Water leaves the site via evapotranspiration.
Size of watershed: < 2.6 km^2 (1 mi^2)
Other field evidence observed: This site is lower than surrounding ground and is separated from Schneider Ditch by a berm. This berm and the berm along the Cahokia Canal hold water within this site. Inundation was observed during a site visit on 21 August 2000.

Wetland hydrology: Yes: X No:
Rationale: The relatively low landscape position and the visual observation of inundation and saturation at the surface indicate that wetland hydrology is present. In our opinion, this site is flooded or saturated long enough to meet the wetland hydrology criterion.

DETERMINATION AND RATIONALE:

Is the site a wetland? Yes: X No:
Rationale for decision: Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are all present. This site meets all of the wetland criteria. The NWI does not code this site as a wetland

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ROUTINE ON-SITE WETLAND DETERMINATION
Site 3 (page 1 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Wet Shrubland
Legal Description: SE 1/4, NE 1/4, Sec. 25, T3N, R9W
Location: Covering most of the north quarter and part of the southwest quarter of the former Eckmann Property

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Indicator Status	Stratum
1. *Populus deltoides*	FAC+	shrub
2. *Salix amygdaloides*	FACW	shrub
3. *Salix exigua*	OBL	shrub
4. *Apocynum cannabinum*	FAC	herb
5. *Asclepias incarnata*	OBL	herb
6. *Leersia oryzoides*	OBL	herb

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 100%

Hydrophytic vegetation: Yes: X No:
Rationale: Over 50% of the dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Beaucoup silty clay loam; revised to Birds silt loam (Typic Fluvaquent)

On county hydric soils list?	Yes: X	No:	Undetermined:
Is the soil a histosol?	Yes:	No: X	Undetermined:
Histic epipedon present?	Yes:	No: X	Undetermined:
Redox concentrations:	Yes: X	No:	Color: 10YR 3/4, 7.5YR 4/6
Redox depletions:	Yes:	No: X	Color: NA

Matrix color: 2.5Y 3.5/
Other indicators: none

Hydric soils: Yes: X No:
Rationale: The Natural Resources Conservation Service identifies Birds as a Typic Fluvaquent which is poorly drained. This soil posesses redox concentrations within a gleyed matrix, which indicates saturated or reduced conditions for long duration during the growing season. Therefore, the soil at this site meets the hydric soil criterion.

ROUTINE ON-SITE WETLAND DETERMINATION
Site 3 (page 2 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Wet Shrubland
Legal Description: SE 1/4, NE 1/4, Sec. 25, T3N, R9W
Location: Covering most of the north quarter and part of the southwest quarter of the former Eckmann Property

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: NA
Depth to saturated soil: 0.28 m (11 in)
Overview of hydrological flow through the system: This site receives water through precipitation and sheet flow from higher ground. Water leaves the site via evapotranspiration and sheet flow onto lower ground (site 1).
Size of watershed: < 2.6 km^2 (1 mi^2)
Other field evidence observed: none

Wetland hydrology: Yes: X No:
Rationale: The observation of saturated soil within 0.3 m (12 in) of the surface indicates that wetland hydrology is probably present. In our opinion, this site is flooded or saturated long enough to meet the wetland hydrology criterion.

DETERMINATION AND RATIONALE:

Is the site a wetland? Yes: X No:
Rationale for decision: Dominant hydrophytic vegetation, hydric soils, and wetland hydrology are all present. This site meets all of the wetland criteria. The NWI does not code this site as a wetland

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ROUTINE ON-SITE WETLAND DETERMINATION

Site 4 (page 1 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Forbland Type 1
Legal Description: N 1/2, NW 1/4, SE 1/4, NE 1/4, Sec. 25, T3N, R9W
Location: Northwest corner of the former Eckmann Property

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Indicator Status	Stratum
1. *Asclepias incarnata*	OBL	herb
2. *Lycopus americanus*	OBL	herb
3. *Setaria faberi*	FACU+	herb

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 67%

Hydrophytic vegetation: Yes: X No:
Rationale: Over 50% of the dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Beaucoup silty clay loam; revised to Birds silt loam (Typic Fluvaquent)

On county hydric soils list?	Yes: X	No:	Undetermined:
Is the soil a histosol?	Yes:	No: X	Undetermined:
Histic epipedon present?	Yes:	No: X	Undetermined:
Redox concentrations:	Yes: X	No:	Color: 7.5YR 4/4
Redox depletions:	Yes:	No: X	Color: NA

Matrix color: 2.5Y 3/1 and 4/1 over N 4/
Other indicators: none

Hydric soils: Yes: X No:
Rationale: The Natural Resources Conservation Service identifies Birds as a Typic Fluvaquent which is poorly drained. This soil posesses redox concentrations within a gleyed matrix, which indicates saturated or reduced conditions for long duration during the growing season. Therefore, the soil at this site meets the hydric soil criterion.

ROUTINE ON-SITE WETLAND DETERMINATION
Site 4 (page 2 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Forbland Type 1
Legal Description: N 1/2, NW 1/4, SE 1/4, NE 1/4, Sec. 25, T3N, R9W
Location: Northwest corner of the former Eckmann Property

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: NA
Depth to saturated soil: 0.53 m (21 in)
Overview of hydrological flow through the system: This site receives water through precipitation and sheet flow from higher ground. Water leaves the site via evapotranspiration and sheet flow onto lower ground (site 3).
Size of watershed: < 2.6 km^2 (1 mi^2)
Other field evidence observed: Well data collected by the Illinois State Geological Survey in 2000 indicate that this site was saturated within 30 cm (1 ft) of the surface for 7.9% of the growing season (Fucciolo *et al.*, 2000).

Wetland hydrology: Yes: No: Undetermined: X
Rationale: No conclusive evidence of wetland hydrology could be found at this site. However, the well data indicates that the length of time this site is saturated may meet (but does not conclusively meet) the criterion for wetland hydrology. Additional well data collected over a longer period is needed to determine if wetland hydrology is present at this site.

DETERMINATION AND RATIONALE:

Is the site a wetland? Yes: No: Undetermined: X
Rationale for decision: Dominant hydrophytic vegetation and hydric soils are present at this site. However, conclusive data for wetland hydrology is needed. This site may or may not meet all of the wetland criteria. The NWI does not code this site as a wetland

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ROUTINE ON-SITE WETLAND DETERMINATION
Site 5 (page 1 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Forbland Type 2
Legal Description: W 1/2, NE 1/4, Sec. 25, T3N, R9W
Location: Covering most of the former Bischoff Property

Do normal environmental conditions exist at this site? Yes: X No:
Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No: X

VEGETATION

Dominant Plant Species	Indicator Status	Stratum
1. *Setaria faberi*	FACU+	herb
2. *Solidago canadensis*	FACU	herb

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 0%

Hydrophytic vegetation: Yes: No: X
Rationale: None of the dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Beaucoup silty clay loam; revised to Birds silt loam (Typic Fluvaquent)

On county hydric soils list?	Yes: X	No:	Undetermined:
Is the soil a histosol?	Yes:	No: X	Undetermined:
Histic epipedon present?	Yes:	No: X	Undetermined:
Redox concentrations:	Yes: X	No:	Color: 7.5YR 4/4
Redox depletions:	Yes:	No: X	Color: NA

Matrix color: 2.5Y 3/1 and 4/1 over N 4/
Other indicators: none

Hydric soils: Yes: X No:
Rationale: The Natural Resources Conservation Service identifies Birds as a Typic Fluvaquent which is poorly drained. This soil posesses redox concentrations within a reduced matrix, which indicates saturated or reduced conditions for long duration during the growing season. Therefore, the soil at this site meets the hydric soil criterion.

ROUTINE ON-SITE WETLAND DETERMINATION
Site 5 (page 2 of 2)

Field Investigators: Ketzner, Wiesbrook & Busemeyer **Date:** 13 September 2000
Project Name: Eckmann-Bischoff Property – FAP 14 (IL 3)
State: Illinois **County:** Madison
Applicant: IDOT District 8 **Site Name:** Forbland Type 2
Legal Description: W 1/2, NE 1/4, Sec. 25, T3N, R9W
Location: Covering most of the former Bischoff Property

HYDROLOGY

Inundated: Yes: No: X Depth of standing water: NA
Depth to saturated soil: 0.53 m (21 in)
Overview of hydrological flow through the system: This site receives water through precipitation and sheet flow from higher ground (the embankment along Cahokia Canal). Water leaves the site via evapotranspiration and sheet flow onto lower ground (sites 1, 2 & 3).
Size of watershed: < 2.6 km^2 (1 mi^2)
Other field evidence observed: This site includes the highest ground in the project area.

Wetland hydrology: Yes: No: X
Rationale: No evidence of wetland hydrology could be found. This site is relatively high ground that drains onto lower ground within the project area. In our opinion, this site is not flooded or saturated long enough to meet the wetland hydrology criterion.

DETERMINATION AND RATIONALE:

Is the site a wetland? Yes: No: X
Rationale for decision: Although hydric soils are present, dominant hydrophytic vegetation and wetland hydrology are absent. This site does not meet all of the wetland criteria. The NWI does not code this site as a wetland

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Vegetation Cover Type Mapping & Wetland Survey

Eckmann-Bischoff Property
FAP 14 (IL 3)
Section (64, 510)-1
P-98-082-90
Madison County, Illinois

Cover Types A-C

- Marsh (Types 1 & 2)
- Wet shrubland
- Forbland (Types 1 & 2)

Wetland Delineation Sites 1-5

Base photo is the Digital Orthophoto Quadrangle (DOQ) from NAPP 1998-1999 aerial photography.

N

0 100 200 Meters

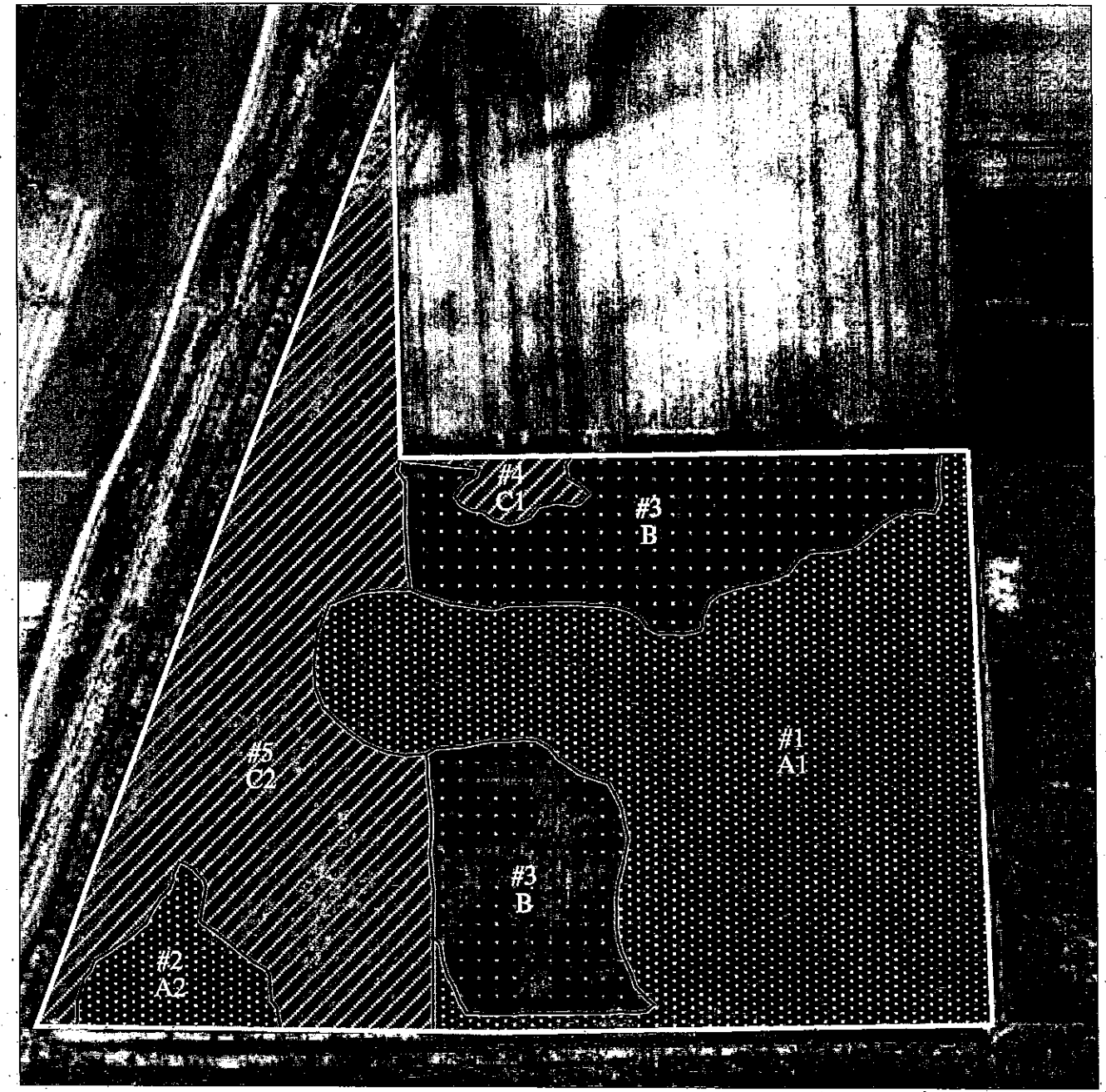

Figure 1. Vegetation cover types at the Eckmann-Bischoff Property.